Chemical Hazards

What is the hazard?
Employees may work with products containing hazardous chemicals in the course of their job duties. Chemicals can expose employees to physical hazards such as fire, explosion, and strong chemical reactions, and also short-term health hazards such as asphyxiation, burns from corrosives, irritation of the respiratory system, and long-term health hazards such as cancer, central nervous system damage, brain damage, reproductive effects, and diseases such as asbestosis. If an employee is not aware that a chemical poses a risk to them, they cannot adequately protect themselves. This is especially true when an employee does not feel any effect from the chemical. For example, exposure to a chemical may be initiating a cancer in the employee, but the employee does not feel ill or have any noticeable effect when using the chemical.

Level of Employee Exposure

Do you have employees exposed to this hazard?
Examples: Employees who work in laboratories and shops, science teachers, art teachers, custodians, facilities maintenance staff, painters, groundskeepers, mechanics, emergency responders (chemical), can be exposed to hazardous chemicals. These chemicals can include (but are not limited to): solvents such as toluene and methylene chloride, pesticides and herbicides, metals such as lead and mercury, and corrosives such as hydrochloric acid and sodium hydroxide.

YES / NO

If you answered NO, you never have any employees exposed to this hazard, you have completed this hazard assessment tool.

If you answered YES, please complete the table below and continue on with the remainder of this hazard assessment tool.

List the tasks that expose your employees to this hazard.
Estimate the number of employees conducting each task, and the estimated frequency that each task is conducted (first per employee and then for the agency overall (e.g., how many times per day/week/month or year)).

1. Describe task that exposes employees to this hazard	2. How often, on average, would an individual employee conduct this task? (list either times per week, per month, or per year, whichever best applies).	3. How many employees do you have who actually conduct this task?	4. Multiply the answer for #2 by the answer for #3 to get a total exposure for your employees.
Example: Strip the floors	*2 times per month*	*8 employees*	*16 times per month*
		Total of all #4 rows:	

Use of Technical Standard / Regulation / Guideline

What regulation or standard do you follow to protect employees from this hazard, if any? Is any other or specific standard followed for areas likely to contain chemical hazards, such as laboratories?

Upper Management Support / Policy / Full Hierarchy Accountability

Is there a written policy on this hazard?

Who is in charge of ensuring that employees are kept safe from this hazard? A) At the senior management level. B) During day-to-day operations.

How does the agency ensure that the regulation or policy relative to this hazard is followed by all employees?

Training / Certification

What training have employees received relative to this hazard?
Is this a one-time training?
If no, how often does re-training occur?
When are new employees trained?
Please provide general information on training content.
Does training include information on specific chemical hazards for the employees' specific tasks and work areas?

CONTROLS

Controls - Administrative

Material Safety Data Sheets:

- Are Material Safety Data Sheets (MSDSs) obtained for all chemical products used?
- What is the procedure for ensuring that MSDSs are obtained, if any?

- Where are MSDSs kept? Are they in a central location only or are they at all worksites?
- How can employees gain access to the MSDSs?
- Are MSDSs kept for products no longer in use? If yes, for how long?

Do you have any policy relative to labeling of hazardous chemical products? If yes, what should be included on the label?

Are potential chemical hazards considered when purchasing chemical products? If yes, how is this assessment done?

Controls - Engineering

Has area ventilation been modified in any rooms or areas to protect employees from chemical hazards (e.g., ventilation rate has been increased, the room is exhausted directly to the outdoors)?

Do you have any special or local ventilation to protect employees from chemical hazards? Is the ventilation functioning properly? How and how frequently is it tested? Examples of special ventilation include chemical fume hoods in laboratories, pull down local air vents used for welding, ventilated tables used for soldering or application of artificial nails, tailpipe exhaust systems used to capture diesel exhaust.

Do you have a safety drench shower or showers?

- What chemicals are in use that dictated the need for the shower?
- What is the water temperature?
- What is the water flow rate?
- How long would it take at-risk employees to reach this shower?
- Do employees need to travel through any doorways or around obstructions/obstacles to reach the shower?
- How frequently is the shower tested?

Do you have an eyewash station(s)?

- Are these hard-plumbed or portable units?
- What chemicals are in use that dictated the need for the eyewash?
- What is the water temperature?
- What is the water flow rate?
- How long would it take at-risk employees to reach the eyewash?
- Do employees need to travel through any doorways or around obstructions/obstacles to reach the eyewash?
- How frequently is the eyewash tested?
- How frequently is the eyewash cleaned and maintained?

Controls - Personal Protective Equipment - Have

What personal protective equipment do you have for this hazard?
What condition is it in?
How often is it inspected?
Is it shared or individually assigned to employees?
Were employees trained in its use and maintenance?
Is it labeled with an ANSI number or Class or other “approval” designation?
How was this equipment selected and by who?
How often/when is it replaced? How is this determined?
If goggles are used to protect from chemical splash, do you know if these are directly vented or indirectly vented? (Directly vented goggles have open slits throughout the non-lens portion. Indirectly vented have vented areas covered by a protective layer.)
If gloves are used to protect hands from chemicals, how were they selected? Did this include protection from specific chemicals as well as breakthrough time?
If respirators are used, are employees medically screened and fit tested?

Do you have the all the correct types of personal protective equipment you need to cover all of the different hazardous chemicals used by your employees and for all the different tasks using hazardous chemicals?

Do you have enough of this personal protective equipment for all of the employees who need to use it at the same time?

Controls - Personal Protective Equipment - Use

How is it determined when personal protective equipment should be used?
By regulation or standard?
By your written policy?
By specific criteria?
Always use for certain tasks?
Case-by-case or field determination?
There is no method for determining when personal protective equipment is used.

When personal protective equipment is supposed to be used, how frequently is it actually used?
Always mostly half-the-time sometimes never

Emergency Response Planning

Is there a plan in place to respond to an accident or emergency with this hazard?
Are you relying on outside responders or do you have an internal response team?
If you are relying on outside responders, do have they been made aware of the chemical hazards at your facility?

Do you know if they are trained and equipped to respond to this type of emergency?
What type of training did internal responders receive?
Has the plan been tested with a drill?

Concerns / Near Misses / Accidents

Is there a designated person to whom employees go with complaints or concerns about this hazard?

Is there a formal reporting procedure for near misses (narrowly avoided accidents)?

Is there a formal reporting procedure for accidents/injuries/illnesses with this hazard?

Have you had any accidents or near misses with this hazard? Please give an estimated date and brief description.

Prevention

In the “Level of Employee Exposure” section, you identified tasks that expose employees to the hazard assessed in this tool.
Can you identify any ways that would eliminate or reduce employee exposure to this hazard?
For example, can you eliminate the hazardous task?
Modify the hazardous task?
Substitute a less hazardous chemical for the task?

What would be needed to implement these preventive measures?

Other / Comments / Anything You Want to Add

Are there any other specific controls to protect employees from this hazard?

Any other general comments:

IF YOU HAVE QUESTIONS OR NEED ASSISTANCE WITH THIS DOCUMENT, CONTACT: Hilary Hackbart, Massachusetts Division of Occupational Safety, 617-969-7177, ext. 333, or hilary.hackbart@state.ma.us